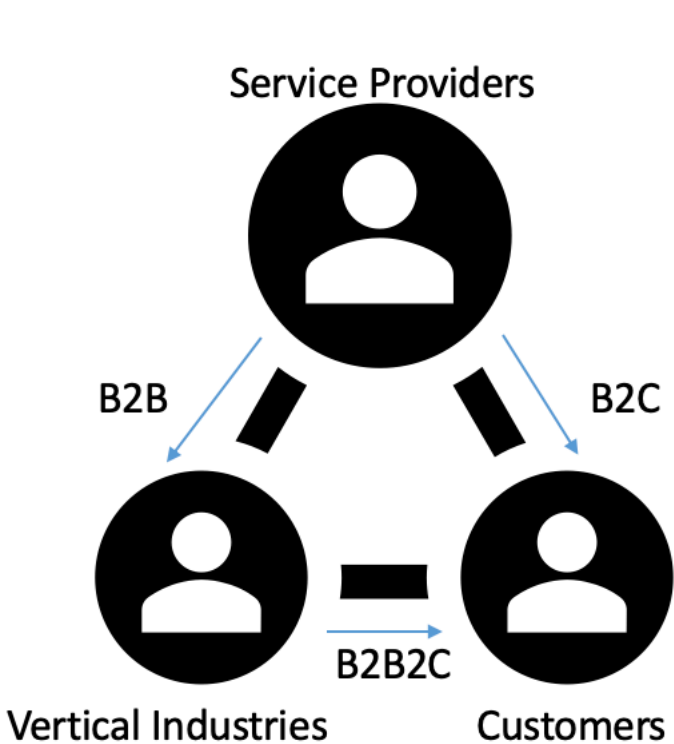


Vertical Industry Oriented on-demand 5G Slice Service Initial Proposal

Participants: China Mobile, Tencent, Huawei
(Welcome more companies to join this case)

Lin Meng (China Mobile)

Business Driver



Open ONAP Capabilities to 3rd party's App server. like slice Activation, Policies, Customized PM Defining, etc.

The internet companies, eg: Tencent, have the need to buy **on-demand 5G service**.

1. They only want 5G service to be provided in hot spot and some specific time period instead of keeping it alive all the time.
2. They have the demand to divide their App users to different slices according to their VIP level and the slice SLA.
3. They want to monitor and measure the slice performance based on their rules.



Provide Apps and differentiated user experience to end users



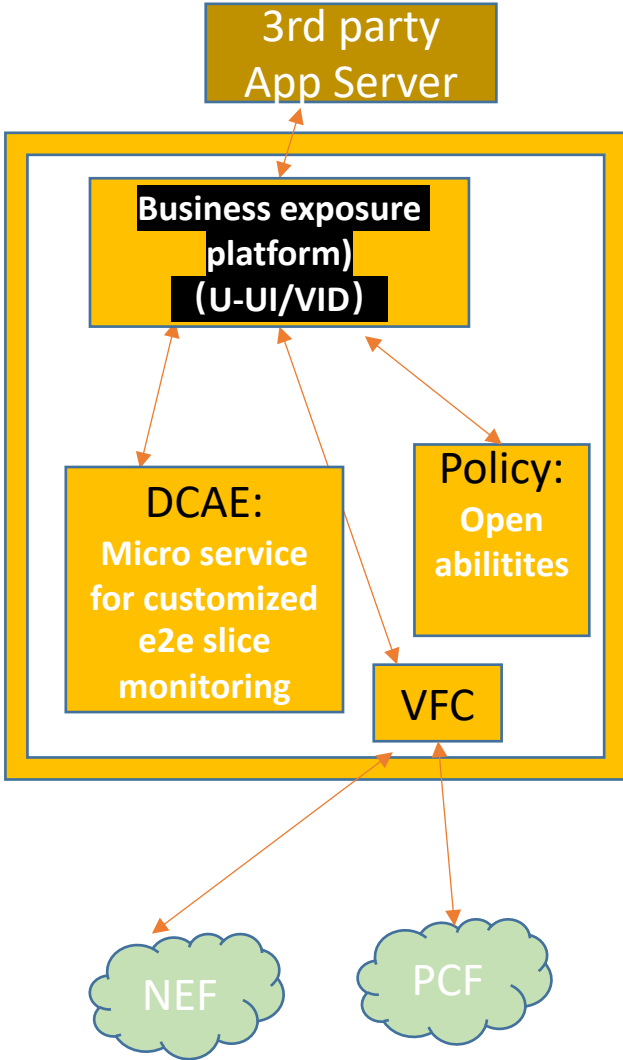
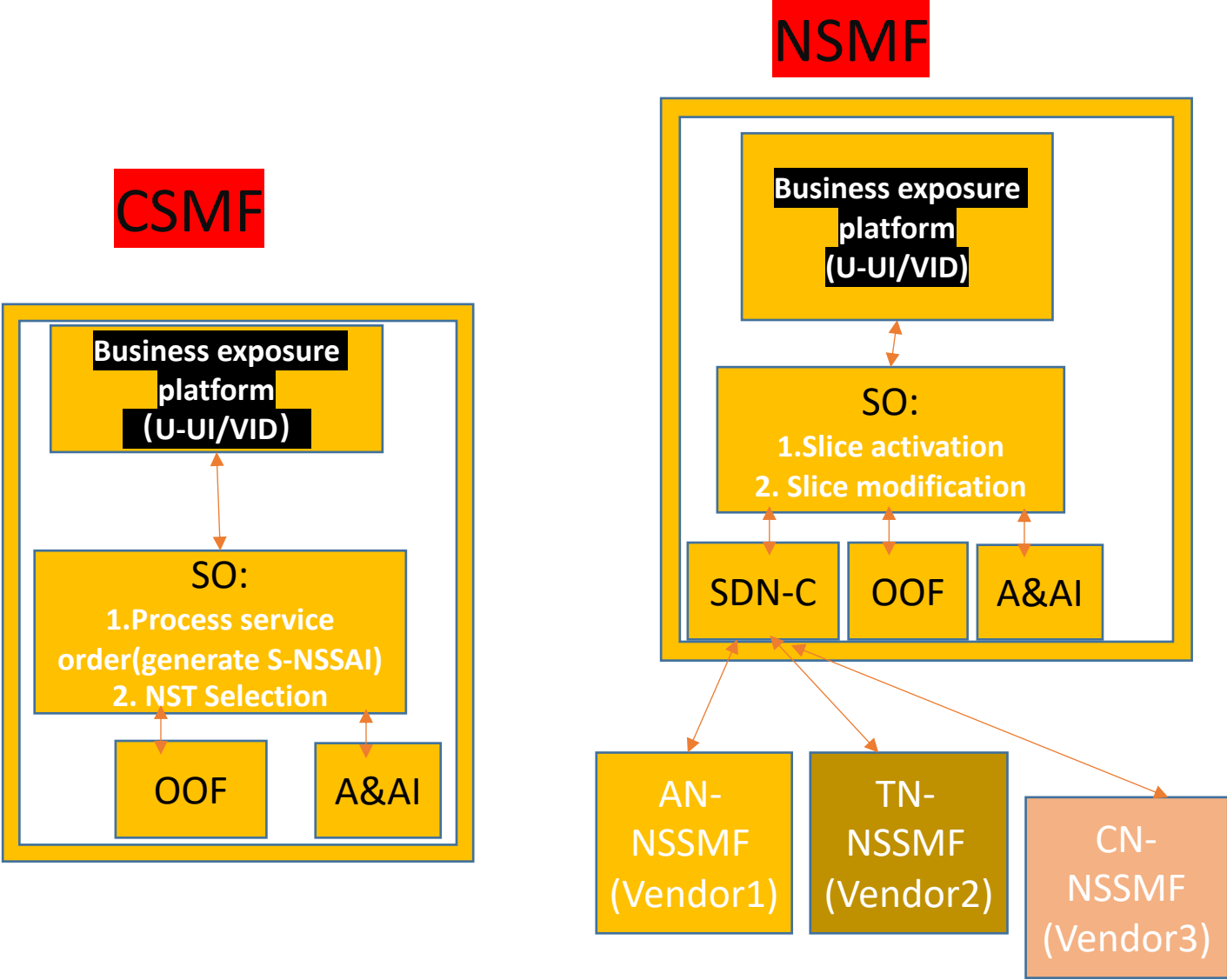
High light of this Use Case



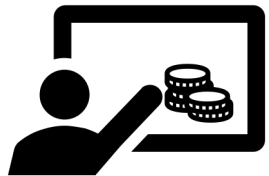
- 1, Provide a prototype(reference implementation) of **CSMF** in ONAP, the functions of which include **order slice service** (generate S-NSSAI), **NST selection**, transferring slice service requirements into network slice requirements.
- 2, Provide a prototype (reference implementation) of **Business Exposure Platform** in ONAP. Connect Internet App server with the core network elements like NEF, PCF, to distribute **real-time user / slice allocation policy**. Besides, open ONAP capabilities to App server.
- 3, **Decouple NSMF and NSSMF**, which means ONAP will play the role of NSMF, connecting NSSMF from different domains and different vendors. Functions like **slice activation** and **slice modification** will be realized in this case.
- 4, **Open ONAP modules to 3rd party Apps**, eg: open DCAE ability to App server to let Verticals **define their customized service monitor KPI**; open Policy for verticals to **trigger** the related action like **activating slice and modifying slice**.

Architecture

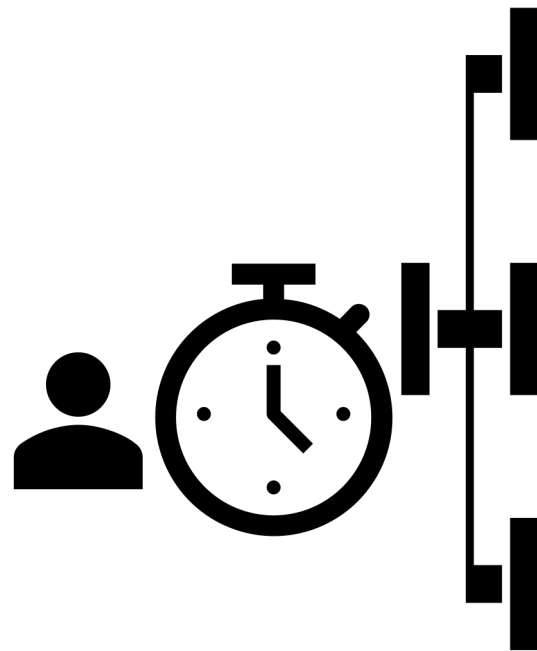
Interaction between Business exposure platform with ONAP modules



On-demand Slice Activation



1. Order Slice Service via ONAP



2. On-demand Slice Activation

App server provides Service time to activate and deactivate the slice service on time

App server provides the mapping relation between the end users and the slices to ONAP via Business Exposure Platform according to their VIP level, ONAP then will process the mapping relation and configure the allocation via PCF.

This feature is based on STEP 1 has been finished : the Industry has bought the On-demand slice and the slice has been instantiated and configured by ONAP. (This feature will be implemented in this use case: <https://wiki.onap.org/display/DW/NETWORK+SLICING+in+R6+Frankfurt>

)

Slice Modification/Update

Update Service

Profile A to Profile B, eg:
to change
maxNumberOfUEs,
coverageAreaTAList,
latency, etc.



ONAP

ROUTE A:

Search the satisfied NSI among the the existed NSIs;
IF (Succeed)
THEN
(Update the bunding from the old NSI to the new NSI);
IF NOT
THEN

ROUTE B

Route B:

Decompose the new Service Profile into new Slice Profile;

Update the original NSSI
Create a new NSSI, update the bunding from the old NSSI to the new NSI

Final Step: Modify the service profile stored in the NSI

Customized Slice PM

Customized KPI template:

KPI Name:

Description:

Time interval:

Measurement in MF:

MF1:

NAME:

KPI1:

KPI2:

MF2:

NAME:

KPI1:

KPI2:

KPI3:

MF3:

NAME:

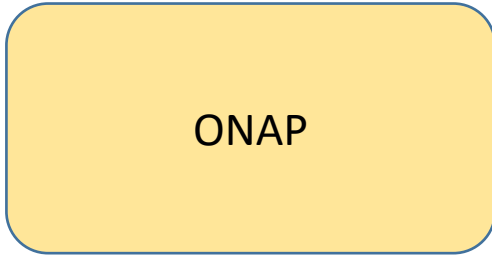
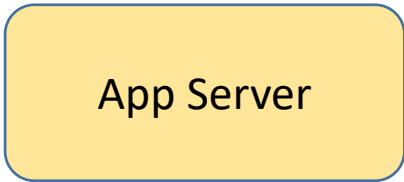
KPI1:

Logical formula definition:



Provide the customized slice PM function as a **Micro service**:

Provide a general manner for slice consumers to define customized Slice performance measurement and generate the KPI result according to user's definition.

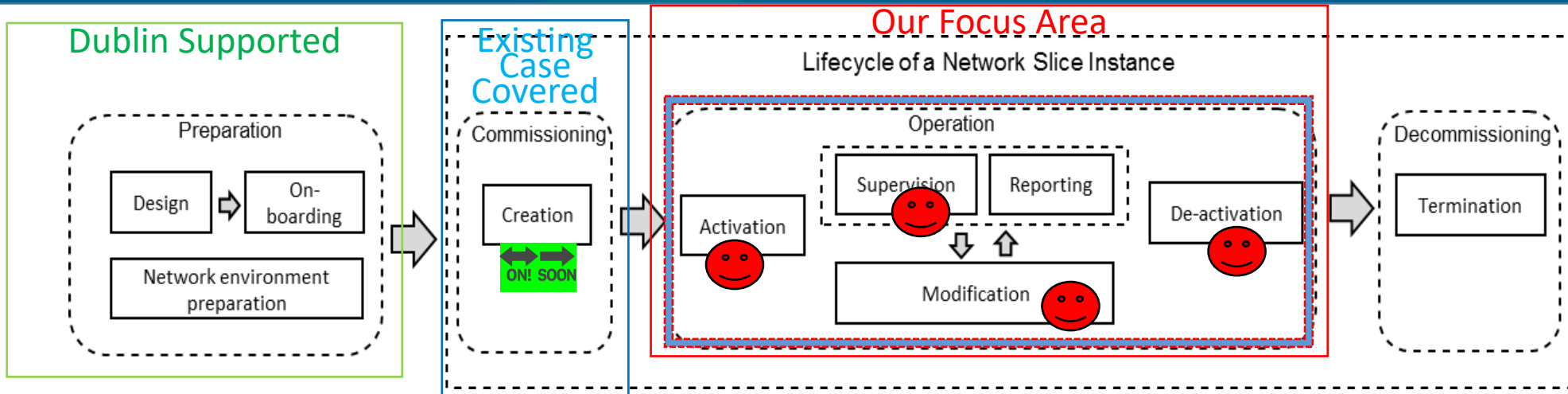


1. Open DCAE ability to App server:
to obtain the defined KPI **according to the KPI template** from App server. App server can look into PM dictionary to see what kind of measurement in the network function can be used.

2. The micro service **retrieves the perf3gpp event** interest provided by the App server from DMaaP Message Router

3. The micro service **calculates** the defined KPI according to the user defined formula, then **generate and report** to the App server referencing the specified time interval.

Current status and the relation with existing case



3GPP NSMF :
Ref.: 3GPP TS 28.530

This Use Case:
(
CSMF
+
Business Exposure Platform
+
NSMF
+
Open ONAP abilities
)

Design Time	Run Time
Design Customized slice PM microservice	<ol style="list-style-type: none"> Order Slice service (Frankfurt) Customized User-Slice Allocation (Future release) Service Change (Future release) Open ONAP interfaces to third party Apps to trigger the following functions in a <i>close loop</i> manner: <ul style="list-style-type: none"> Slice Activation/Deactivation (Frankfurt) Slice Modification (Future release) Customized E2E slice PM (Frankfurt stretch goal): <ul style="list-style-type: none"> Open interfaces to define customized KPI Customized slice PM Microservice

Schedule

Feature for Frankfurt	Impact Modules
Order Slice Service(generate S-NSSAI)	U-UI, SO, A&AI
Slice Activation/deactivation	U-UI, SO, SDN-C, Policy
Customized E2E slice PM (at S-NSSAI level) Stretch goal in Frankfurt	Modeling, U-UI, SO, DCAE
Features for future release	Impact Modules
NST Selection	SO, A&AI, OOF
Customized User-Slice Allocation	U-UI, SO, A&AI, VFC
Service Change(Modification)	U-UI, SO, A&AI, OOF

Thanks!